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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

BACHNER, REBECCA M

ART UNIT PAPER NUMBER

3623

DATE MAILED: 01/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/398,378

Applicant(s)

LAHEY ET AL.

Examiner

Rebecca M Bachner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-18, 20-30 and 32-36 is/are rejected.
- 7) ☒ Claim(s) 7, 19 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The following is a Final Office Action in response to the communication received on November 4, 2002. The finality of the office action sent July 17, 2002 has been withdrawn. Claims 1-36 are still pending.

Allowable Subject Matter

Claims 7, 19, and 31 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims. Claims 7, 19, and 31, are allowable as none of the art cited individually or in combination teaches performing and determining error recovery with notifying, processing and modifying the signal and status of the work process.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily

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published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-6, 12-18, 24-30, and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Torii (P.N. 6,389,446).

(Amended) As per claims 1, 13, and 25, Torii discloses a method, a system, and an article of manufacture, for processing a job, comprising:

generating a signal when status for the job is changed from a first status to a second status, wherein the job may be processed by one or more work processes (see figures 4 and 5, column 6, lines 14-50, the status of the threads change and a signal is generated in order to change status);

notifying a work process associated with the second status that one job had its status changed to the second status in response to the signal (see figures 4-5, column 6, lines 14-50, The job in the work process, inside the thread, was notified of the change in status);

processing, with the work process, the job that had its status changed from the first status to the second status (see figures 4-5, column 6, lines 14-50, The job in the work process, inside the thread, was processed); and

modifying, with the work process, the status of the job after completing the processing of the job (see figures 4-5, column 6, lines 14-30, The status of the job is modified after the job is completed).

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As per claims 2, 14, and 26, Torii discloses all the limitations of the method of claims 1, 13, and 25, wherein the signal is transmitted to a routing process and indicates the second status, further comprising: processing with the routing process a mapping associating each status with one work process in response to receiving the signal (see figures 4-5, column 6, lines 13-42, each status is associated with a work process and a signal); and

determining from the mapping one work process associated with the second status, wherein the determined work process is notified of the job (see figures 4-5, column 6, lines 13-42, the work process is notified of a job and a second status).

As per claim 3, 15, 27, Torii discloses all the limitations of the method of claims 1, 13, and 25 wherein job status is maintained in a database table including information on the job, further comprising maintaining, with the work process, a connection with the database that enables communication with the database table, wherein modifying the status of the job after completing processing comprises updating the status of the job to an output status associated with another work process, and wherein updating the status with the output status generates the signal indicating a change in status (see column 6, lines 64-67, through column 7, lines 1-18, and column 9, lines 47-67, through column 10, lines 1-12, and figures 8, 9 and 11, the thread status table stores the status of the thread and is updated and a signal is generated to change the output).

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As per claims 4, 16, and 28, Torii discloses all the limitations of the method of claims 1, 13, and 25, wherein the signal is generated by an event trigger in the database that responds to an update to the status of the job in the database table (see column 6, lines 64-67, through column 7, lines 1-18, and column 9, lines 47-67, through column 10, lines 1-12, and figures 5, and 11, the signal is generated by an event and the status is updated).

As per claims 5, 17, and 29, Torii discloses all the limitations of the method of claims 4, 16, and 28, wherein there are multiple work processes each associated with one input status and at least one output status, wherein each worker is enabled to update the job status with one associated output status after completing the processing of the job, wherein the output status for one worker is the input status associated with one other worker, and wherein the definition of input and output statuses for workers defines the workflow of the job (see column 6, lines 64-67, through column 7, lines 1-18, there are multiple threads with parents and children, the job status is updated which begins another job).

As per claims 6, 18, and 30, Torii discloses all the limitations of the method of claim 3, 15, and 27, further comprising the work process performing:

determining whether the work process completed processing the job successfully (see column 6, lines 43-50, the work process is determined to be completed successfully if no error message is given); and

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updating the status of the job to an error status if the work process did not complete processing the job successfully, wherein the status of the job is updated with one output status associated with the work process if the job work process completed processing the job successfully (see column 6, lines 43-50, the status of a job is updated to an error status if the job did not complete successfully and then an error message is given).

As per claims 12, 24, and 36 Torii discloses all the limitations of the method of claims 1, 13, and 25, further comprising: adding a status update to a list providing status updates for each job (see column 9, lines 47-57, through column 10, lines 1-13, the status updates are on a status table and the table, or list); and

using the list to determine how the job has been processed by the work processes (see column 9, lines 47-57, through column 10, lines 1-13, the status updates on a status table , or list, can be used to determine the jobs processed by the workflow process).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 10-11, 22-23, and 34-35, are rejected under 35 U.S.C. 103(a) as being unpatentable over Torii in view of Flores et al (P.N. 6,056,413).

As per claims 10, 22, and 34, Torii discloses all the limitations of the method of claims 1, 13, and 25. Torii does not explicitly disclose wherein the job comprises a data file, wherein at least one work process processes the data file to alter its format and at least one other work process processes the data file in the altered format to transmit the work process to an output device. However, Flores discloses that the data can be formatted for different workflow processes and for outgoing transactions (see column 7, lines 27-31, column 8, lines 14-30, and figure 4). Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to disclose altering a data file format to transmit to an output device as it allows the work process to be more flexible in communicating with other devices.

As per claims 11, 23, and 35, Torii discloses all the limitations of the method of claims 10, 22, and 34. Torii does not explicitly disclose wherein at

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least two workers process the job at different devices in communication over a network, further comprising accessing the job from another device over the network to process the job at the device on which that worker executes.

However, Flores discloses the jobs using different devices to communicate over the network (see figure 5, and column 8 lines 64-67, through column 9, lines 1-4). It would be obvious to one of ordinary skill in the art at the time of the invention to disclose processing the job at different devices over a communications network as it allows the work process to more flexible in communicate with other devices.

6. Claims 8-9, 20-21, and 32-33, are rejected under 35 U.S.C. 103(a) as being unpatentable over Torii.

As per claims 8, 20, and 32, Torii discloses all the limitations of the method of claim 3, 15, and 27. Torii does not explicitly disclose a database. However, Torii does disclose a using a thread status table (see column 6, lines 14-30, and column 9, lines 47-67, through column 10, lines 1-13). Torii further discloses wherein the work process further performs: having the status associated with the work process and processing the job having the status associated with the work process (see column 6, lines 64-67, through column 7, lines 1-18, the status is associated with the work process and the job has its status associated with the work process).

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Torii also discloses terminating processing if there are no further jobs in the having the status associated with the work process (see figure 16, and abstract, the threads terminate in accordance to the thread status table).

As Torii does not disclose a database, Torii does not disclose querying the database table for jobs. However, a database consists of tables and the use of querying databases to determine the next job is a common and well known technique used in the art. Therefore, it would be obvious for one of ordinary skill in the art to disclose a querying a database as it allows the workflow process to accurately and efficiently determine the next job to process.

As per claims 9, 21, and 33, Torii discloses all the limitations of the method of claims 8, 20, and 32, wherein the work process spawns a work thread to process one job in the database table having the status associated with the work process, wherein the work process is capable of spawning multiple work threads to process different jobs having the status associated with the work process (see abstract and figures 1-5, the work process are capable of generating work threads that have statuses associated with the work process).

Response to Arguments

7. The applicant argues that Torii does not teach 1) that “a job may be processed by one or more work processes”; 2) generating a signal when the status for the job is changed, notifying a work process associated with the second status that one job had its status changed to the second status, the job processed by one or more work processes, and modifying the status of the job; 3) mapping a work process with a status of a job; 4) a database table and another work process being associated with an output status as taught in claim 3; 5) event triggers as taught in claim 4; 6) that the output status is the input status associated with one other work process; 7) updating the status of the job to an error status after determining whether the work process completed processing the job successfully; and 8) a list providing status updates of each job.

The applicant also argues 9) that there is no motivation to combine Torii and Flores; 10) Flores does not describe an error work process being associated with an error status and does not teach setting the job’s status; 11) Flores does not teach that a job comprises a data file; and 12) Torii cannot teach querying the database of the job status.

As per argument 1, Torii discloses a process inherently contains one more work processes. A job process must be processing a job. This amendment does not further limit the claim.

As per argument 2, a job is a thread. Torii discloses that a thread is an instruction stream. Torii discloses in the abstract that the thread contains status information. The various threads are all synchronized and execution of a child thread can only terminate once a parent thread has terminated as taught in column 4, lines 44-55. A signal is generated when the status is changed as the threads are aware when one has ended so a child thread can end as the threads are sequential. Notifying occurs in column 6, lines 14-50 as the status of the threads are indicated and recorded. As taught by Torii the "thread is terminated in the order of generations" and the status of each thread is processed and modified.

As per argument 3, Torii does disclose determining from the mapping one work process associated with the second status, wherein the determined work process is notified of the job. In figures 4-5, the abstract and column 6, lines 13-42, the work process is notified of a job and a second status. The threads are notified of the status change of another thread and new threads begin based on mapping the thread with its status as the threads are all synchronized to accomplish a task.

As per argument 4, figures 5, and 11, column 6, lines 64-67, through column 7, lines 1-18, and column 9, lines 47-67, through column 10, lines 1-12 all disclose the status update, or table, and another thread, a job completed by work processes, are associated with the status (shown in the table).

As per argument 5, Torii discloses that the signal is generated by an event trigger in the database that responds to an update to the status of the job in the table in figures 5-11, column 6, lines 64-67, through column 7, lines 1-18, and column 9, lines 47-67,

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through column 10, lines 1-12. The event that generates the signal is the end or the beginning of the thread execution. Figure 6, column 7, lines 21-43 and column 8, lines 34-64, disclose an event signal and changing the status when the thread terminates. The event of the termination of the thread requires the table to change and update its status of the job.

As per argument 6, Torii discloses that the threads are synchronized and associated, as the output status of one thread affects other threads. Torii teaches in the abstract and column 4, lines 44-67, that a child thread cannot terminate unless a parent thread terminates.

As per argument 7, Torii discloses updating the status of the job to an error status if the work process did not complete processing the job successfully, wherein the status of the job is updated with one output status associated with the work process if the job work process completed processing the job successfully. Torii discloses in column 6, lines 43-50, and column 9, lines 20-32, that the status of a job is updated to an error status if the job did not complete successfully and then an error message is given. If the job is completed successfully, then the next thread can then terminate and the status is shown in the table as described above.

As per argument 8, Torii discloses a list providing status updates of each job. As described in detail above, each job is a thread (not a thread processor). The status of every thread is shown in the status table. Column 9, lines 47-57, through column 10, lines 1-13, describe that the status updates are on a status table and the table, or list.

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As per argument 9, in response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Torii and Flores are combinable as both Torii and Flores teach workflow system that uses events and status and error messages to communicate jobs that are processed.

As per argument 10, Flores does describe an error work process being associated with an error status and setting the job's status. Flores et al. discloses in column 12, lines 1-9, and column 24, lines 35-40, that an error message is displayed on the screen of an error worker who must perform error recovery so that the work processes can continue. Once the error recovery is completed, no error notification will be received and the workflow process will continue. The status of the workflow is returned once the error is corrected. In addition, column 55, lines 60-67, through column 56, lines 1-53, further describe the error handling function. The work process records the error status and therefore the processes are associated with it and the status is set. Furthermore, Flores is combined with Torii, who teaches a job's status (including an error status). Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to teach Flores' error recovery system as it allows Torii's workflow system to more reliably complete a thread.

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As per argument 11, Flores, in column 7, lines 27-31, column 8, lines 14-51, and figure 4, discloses a data file wherein the data can be formatted by the processor for different workflow processes and for outgoing transactions. The processor is sent the data and may alter its format for the outgoing transaction.

As per argument 12, Torii can teach querying the database as Torii already teaches a status table. The applicant did not argue that a database consists of tables and that the use of querying databases to determine the next job is a common and well-known technique used in the art. Therefore, it would be obvious for one of ordinary skill in the art to disclose a querying a database as it allows the workflow process to accurately and efficiently determine the next job (or thread) to process. One would be motivated to use a database to determine the status of a thread in Torii's workflow system as it is a reliable way to synchronize the threads.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

9. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Rebecca Bachner** whose telephone number is 703-305-1872. The examiner can normally be reached on Monday - Friday from 8:30am to 5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Tariq Hafiz** can be reached on **(703)305-9643**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Receptionist** whose telephone number is **(703) 308-1113**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington D.C. 20231

or faxed to:


(703) 305-7687 Official communications; including After Final communications labeled "Box AF"

(703) 746-7306 Informal/Draft communications, labeled "PROPOSED" or "DRAFT"

Hand delivered responses should be brought to Crystal Park 5, 2451 Crystal Drive, Arlington, VA, 7th floor receptionist.

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January 16, 2003


KYLE J. CHOI
PRIMARY EXAMINER
Art Unit 3623